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INPUT TO THE CALIFORNIA RESOURCES AGENCY ON THE DRAFT POLICY ON COASTAL EROSION PLANNING AND RESPONSE

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I appreciate the opportunity to comment on the draft policies and also applaud the Resources Agency for looking carefully at existing policies and practices in light of the recognized conflicts and policy issues in the coastal zone. It is clear in California and elsewhere that there is an increasing conflict between the desire to live directly on the oceanfront and the physical processes that operate within a few feet of sea level (El Nino and storm events as well as a continually rising sea level). It seems unlikely that sea level is going to recede in the near future.

The Resources Agency may or may not be aware of a very thorough study completed nearly 10 years ago (Griggs, Pepper and Jordan-*California's Coastal Hazards: a Critical Assessment of Existing Land-Use Policies and Practices,* 1992). This project was carried out through funding provided by the California Policy Seminar Program, a joint program of the University of California and the state government. The focus of the study was precisely the same as the Draft Policy. Through a careful review of existing coastal hazard legislation and policy, combined with interviews with each state agency involved in the coastal zone, as well as all of California's cities and counties, we prepared an extensive report and a set of clear recommendations. Many of the draft recommendations included in the Resources Agency report are nearly identical to or consistent with our recommendations from 9 years ago. I recommend you look at the report and have attached the Executive Summary and Recommendations.

I wish to comment on several components of your draft policy.

1. OVERARCHING PRINCIPLES

E. *Restoration of beaches should be pursued.*

Clarification is needed here as to what *restoration* is referring to? Does this mean restoring a beach to its condition as of some particular historic date? Does this mean sand should be added to the beach through artificial nourishment regardless of whether or not it will remain on the beach? In parts of southern California, for example the Santa Monica Cell, there is now concern that, whereas the beaches were wider in the recent past (due most probably to a history of sand supply augmentation from dredging of new marinas, excavation for the LA airport and Hyperion Sewage Treatment Plant, for example), that these artificial inputs are not longer taking place. Thus the beaches are narrowing (although there are not comprehensive studies) and there is pressure to "restore" the beaches. With the pressure on the legislature to nourish beaches, it is important to clarify what restoration refers to and in this case, it isn't realistic to think that these beaches could be restored to artificially widened conditions.

F. Hazard avoidance should be the preferred method for addressing coastal erosion. I am in complete agreement that hazard avoidance be a key component of any future state coastal policy. Our No. 1 recommendation in the 1992 study was*: Mandate that coastal hazard avoidance is the overriding state policy.* There is no question that sea level is rising and that the earth is in a period of global warming. It is also clear that sea level has constantly fluctuated throughout the history of the earth due to a constantly changing climate. Sea level was ~350 feet lower and the shoreline of California was 5 to 10 miles seaward 18,000 years ago, and the shoreline is destined to advance slowly inland as long as warming continues. Recognizing and accepting this fundamental long-term geologic process should provide strong guidance and advise us that we can't hold back the entire Pacific Ocean forever. We need to begin a conscious practice of hazard avoidance and planned retreat rather than further intensifying our development directly in the path of the ocean's advance.

II PLANNING AND REGULATION

C. Consideration of all excavated or dredged material as potentially suitable nourishment material.

This is a well-directed section and may be loosened up even more in terms of deposition of material in the littoral zone. There is a common perception and argument that unless material dredged or available is well-sorted medium or fine-grained sand that it shouldn't be placed on a beach or in the nearshore zone. What many people fail to realize is that our natural sources of sand aren't all perfectly sorted. The major contributions to our state's littoral sand budget are flood flows from rivers. These flows carry a mixture of sand, silt and clay which the river, waves and wave-induced currents sort, transport and deposit. There are millions of tons of silt and clay that are dumped into the coastal zone annually from rivers in flood, and the ocean does a good job of sorting them out. We can no longer afford to be so rigorous in determining what material is beach compatible. Granted, it makes no sense to dump certain types of material directly on the beach, but discharge in the surf zone may be very advisable for lots of material that doesn't strictly meet specific beach grain size criteria.

E. *Guiding principle behind State Parks system should be hazard avoidance.* This is an excellent recommendation and will be a departure for the state. In the case of Seacliff State Beach, the timber bulkhead has now been replaced 8 times in the last 70 years, and each time rebuilt in nearly an identical manner. Hazard avoidance has not been the past practice.

III COASTAL PROTECTION PROJECTS

A. **Restoration and nourishment of beaches should be preferred erosion response...**

2. **Non-structural measures are included to maintain the affected beaches in a nourished state.**

The statement here is not clear to me. What *non-structural* measures will maintain a beach in a nourished state? I don't think there are any.

I do believe that the concept of beach nourishment needs very careful evaluation and a lot more work than has been done to date, prior to any major nourishment project. Given the high littoral drift rates that characterize the coast of California, unless nourishment takes place in a pocket beach with no net littoral drift, the nourished sand will probably have a relatively short half life, although this is not often discussed or considered by those advocating large scale and long term nourishment projects. I strongly recommend that the use of groins be seriously considered with any proposed nourishment project; they have been effectively used at a number of locations in California, and should given equal consideration with nourishment in areas where beach restoration or replenishment is being proposed. Without groins to stabilize or hold the added sand in place, this material will be carried alongshore and will not remain in place. Some groins have been poorly planned in the past but there is a real distinction between a groin field consisting of groins a 100 feet or so in length, and a pair of jetties that extend 1000's of feet offshore. Groins are typically put in the same sentence as jetties, breakwaters and seawalls as undesirable when in fact, if properly planned and installed, they mimic natural headlands and can significantly expand and stabilize existing or replenished beaches.

B. **Construction of seawalls, revetments, breakwaters, groins or artificial rigid structures for coastal erosion control should be discouraged....**

I believe some clarification is needed here. Breakwaters are not normally built (at least in California) to control coastal erosion but have been built to provide harbors or boat anchorages. Seawalls and revetments should be thought of totally differently than groins, as discussed above. No seawall or revetment was ever built to protect a beach; they are normally built to protect developed bluffs, cliffs or dune areas. On the other hand, groins can work very effectively to mimic natural headlands and can serve to create, stabilize, or widen beaches and as such, form a natural and necessary complement to replenishment or nourishment. The great bulk of California's beaches are a result of points, headlands, or artificial sand obstruction structures.

Of all of the above-mentioned structures, only groins will protect an existing public beach in danger of erosion.

Revetments, which are routinely approved for state land by the State Lands Commission do cause the loss or covering of public beaches and this policy, while not specifically mentioned in the draft, needs to change.

IV STATE PARTICIPATION IN EROSION RESPONSE PROJECTS

A. State financial participation...
   1. Recommended when public benefits are greater than public costs

This approach is a potentially problematic one and was the approach used for decades by the Army Corps of Engineers and the Bureau of Reclamation as they built dams across the west. If the Benefit: Cost ratio was greater than 1.0, then the project was deemed to be appropriate. This is a narrow view and perhaps wasn't intended this way. A good example here was the 7th reconstruction of the timber bulkhead at Seacliff State Beach in Northern Monterey Bay. It was justified on the basis of a 20-year life span, the number of visitor days of usage, and the cost of reconstruction. Two months later, the 1983 El Nino storms hit and half of the wall just rebuilt was destroyed, 18 years earlier than the economists had determined. Simply Benefit: Cost ratios are not enough and can be very misleading.

Thank you for the opportunity to provide input. I will not be able to attend the public meeting in Santa Cruz.

Sincerely,

Gary B. Griggs
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